World Headquarters
Hach Company
P.O.Box 389
Loveland, CO USA 80539
(970) 669-3050

MSDS No: M00146

SAFETY DATA SHEET

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: Hexamethylenetetramine Buffer
Catalog Number: 2603999

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00146
Chemical Name: 1,3,5,7-Tetraazatricyclo[3.3.1.1^{3,7}]decane
Chemical Formula: $C_6H_{12}N_4$
Chemical Family: Aromatic Amines
Use of the substance/preparation: Laboratory Reagent
CAS No.: 100-97-0
Hazard: May cause irritation. Flammable solid. May cause allergic reaction.
Date of MSDS Preparation:
Day: 03
Month: August
Year: 2006
Additional Emergency Response Numbers: Austria: +49 (0)6131 19240, Belgium: +32-(0)70-245245, France: +33-(0)1-40370404, Italy: +39-02-66101029, Netherlands: +31-(0)30-2748888, Switzerland: +41-(0)1-2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hexamethylenetetramine
EEC Number: 2029058
CAS No.: 100-97-0
Percent Range: 100,0
Percent Range Units: weight / weight
Ingredient EEC Symbol: Xn - HARMFUL
Ingredient R phrase(s) (R phrase details given in Heading 16): R 11 R 42/43
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m^3 Inhalable dust

3. HAZARDS IDENTIFICATION

Emergency Overview:
Appearance: White powder
Odor: None
EU Symbols: F - HIGHLY FLAMMABLE Xn - HARMFUL
R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.

Protective Equipment:
Potential Health Effects:
Eye Contact (EC): May cause irritation
Skin Contact (EC): May cause irritation May cause allergic reaction
Skin Absorption (EC): None Reported
Target Organs (SA E): None Reported
Ingestion (EC): May cause: abdominal pain gastrointestinal tract irritation kidney damage
Target Organs (Ing E): Kidneys
Inhalation: May cause: respiratory tract irritation allergic respiratory reaction
Target Organs (Inh E): None Reported
Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions Allergies or sensitivity to hexamethylenetetramine.
Chronic Effects: None reported
Cancer / Reproductive Toxicity Information:
IARC Listed: No

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen.
Toxicologically Synergistic Products: None reported

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.
Skin Contact (First Aid): Wash skin with soap and plenty of water. Remove contaminated clothing. Call physician if irritation develops.
Ingestion (First Aid): Give large quantities of water. Call physician immediately.
Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Exposure to heat may promote violent decomposition. Can burn in fire, releasing toxic vapors.
Hazardous Combustion Products: May emit toxic and corrosive fumes.
Fire / Explosion Hazards: Do not expose to sparks or other ignition sources. Do not expose to flames. May react violently with: strong acids strong oxidizers
Static Discharge: None reported.
Mechanical Impact: None reported
Extinguishing Media: Water spray to cool containers Dry chemical. Water. Carbon dioxide Alcohol foam.
Extinguishing Media NOT To Be Used: Not applicable Not applicable Not applicable Not applicable Not applicable
Fire Fighting Instruction: Containers can build up pressure if exposed to heat. As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear. Evacuate area and fight fire from a safe distance.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:
Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.
Containment Technique: Remove all combustible material from spill area. Remove all ignition and spark-creating sources from the spill area. May be ignited by: heat, sparks, or flames. Cover spilled solid material with sand or other inert material. Stop spilled material from being released to the environment.
Clean-up Technique: Eliminate all sources of ignition. Use only non-sparking tools. Avoid contact with spilled material. Sweep up material. Incinerate material at an E.P.A. approved hazardous waste facility. Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: a pound or more of loose powder is spilled. If conditions warrant, increase the size of the evacuation.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.
Storage: Keep away from: acids oxidizers
Special Packaging Instructions: Not applicable
Use of the substance/preparation: Laboratory Reagent

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust. Maintain general industrial hygiene practices when using this product.
Personal Protective Equipment:
Eye Protection: safety glasses with top and side shields
Skin / Hand Protection: disposable latex gloves lab coat
Inhalation Protection: adequate ventilation
Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling. Keep away from: acids/acid fumes oxidizers
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m^3 Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White powder
Physical State: Solid
Odor: None
pH: 0,2 M solution = 8,4
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Sublimes @ 280°C (536°F)
Melting Point: Sublimes @ 280°C (536°F)
Flash Point: 236°C (482°F)
Method: Open cup
Autoignition Temperature: 410°C (770°F)
Flammability Limits:
Lower Explosion Limits: Not determined
Upper Explosion Limits: Not determined
Specific Gravity (water = 1): 1,33
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not available
Partition Coefficient (n-octanol / water): Not available
Solubility:
Water: 1 g/ 1,5 ml H_2O
Acid: Decomposes
Other: 1 g/ 12,5 ml alcohol; 1 g/ 320 ml ether; 1 g/ 10 ml chloroform
Metal Corrosivity:
Steel: Not determined
Aluminum: Not determined

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Heating to decomposition.
Reactivity / Incompatibility: May explode in contact with: acids acetic acid nitric acid ammonia salts
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides formaldehyde
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:
LD50: Oral mouse LDLo = 512 mg/kg
LC50: None reported
Dermal Toxicity Data: None reported
Skin and Eye Irritation Data: None reported
Mutation Data: Cytogenic analysis in human Hela cells @ 1 mmol/l; Oncogenic Transformation - hamster kidney - 10 mg/L
Reproductive Effects Data: None reported
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Ingredient Toxicological Data: --
Not applicable
IARC Listed: No

12. ECOLOGICAL INFORMATION

Product Ecological Information: Water Pollution Factors: BOD_5: 0,015; 0,026 std. dil. sew.

Ingredient Ecological Information: --
Not applicable

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:
I.C.A.O. Proper Shipping Name: Hexamethylenetetramine
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ICAO Hazard Class: 4,1
ICAO Subsidiary Risk: NA
ICAO UN/ID Number: UN1328
ICAO Packing Group: III
I.M.O.:
I.M.O. Proper Shipping Name: Hexamethylenetetramine
--
I.M.O. Hazard Class: 4,1
I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: UN1328
I.M.O. Packing Group: III
A.D.R.:
A.D.R. Proper Shipping Name: Hexamethylenetetramine
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A.D.R Hazard Class: 4,1
A.D.R. Subsidiary Risk: NA
A.D.R. UN-Number:: 1328
A.D.R. Packing Group: III
Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316

15. REGULATORY INFORMATION

National Inventories:
EEC Inventory Status: EINECS Listed: Yes
EEC Number: 2029058
EEC LABEL COPY:
EU Symbols: F - HIGHLY FLAMMABLE Xn - HARMFUL
R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.
S PHRASES: S 16: Keep away from sources of ignition - No smoking. S 22: Do not breathe dust. S 24: Avoid contact with skin. S 37: Wear suitable gloves.

16. OTHER INFORMATION

References: Vendor Information. Technical Judgment. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor).
R PHRASES: R 11: Highly flammable. R 42/43: May cause sensitization by inhalation and skin contact.
Use of the substance/preparation: Laboratory Reagent
Revision Summary: Updates in Section(s) 6,

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.